

Factors Affecting The Food Security of The Bajo Community Households In West Muna District During The Covid-19 Pandemic

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ABSTRACT

This study aims to determine the factors that affect the household food security of the Bajo community in Napano Kusambi Sub District. The research was conducted in Napano Kusambi Sub District, West Muna District, the selection of the research location was carried out deliberately (Purposive), with the consideration that the village is a coastal village with many Bajo community settlements, most of whom work as fishermen. The population in this study were all the Bajo people in Napano Kusambi Sub District, namely 180 families, with a total sample size of 64 respondents using the Slovin formula. To answer the objective, a binary logistic model is used. The results showed that based on the binary logistic test, the factors that significantly influenced household food security of the Bajo community in Napano Kusambi Sub District, West Muna District were income, age of the head of the household, and the age of the housewife.

Key words: food security; bajo community; logistic

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1. Introduction

Indonesia is an archipelago country, where about 75% of the national territory is in the form of oceans. One of the most important parts of the geographical condition of Indonesia as an archipelago is the coast and coastline, with a length of 81,000 km. Coastal and coastal areas have a strategic meaning because they are areas of interaction/transition between terrestrial and marine ecosystems that contain large enough biological production (Nuryanti, Ilsan, & Ismail, 2019).

The wealth of natural resources that are owned, especially in the fisheries and marine sector, creates an attraction for various parties to make direct use of it because sectorally it makes a large contribution to economic activity. With abundant natural resources, coastal communities should be able to meet their needs for food properly and live fairly and equitably, but on the contrary, only a handful of fishermen are living

life, especially with the Covid-19 pandemic which has caused a decline in the market share of agricultural products (Kamim, 2020). The more aggravating the level of fishermen's food sufficiency so that farmers and fishermen are increasingly having difficulty getting food, meeting the needs of their families (Simanjuntak & Erwinsyah, 2020). This has resulted in a disparity in the level of welfare of coastal communities which is synonymous with poverty, thus affecting food availability and access.

The Bajo people in West Muna District, especially in Napano Kusambi Sub District, live in coastal areas and have a livelihood as traditional fishermen using simple fishing gear and boats so that limited fishing results and low-income levels affect fishermen household food access. Tajerin, Sastrawidjaja & Yusuf, (2011) ; Ambarwati, (2013) fishermen are a group of people who are still left behind, and the level of welfare of the fishing community is still low because fishermen do not have the availability of rice so they must have the purchasing power of rice and other food needs, as a result, the resilience of fishermen group households is vulnerable because they do not have rice. access to other local food that can strengthen food security (Saediman et al, 2019).

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During the Covid 19 pandemic, food security conditions for fishing households were difficult to achieve if fishermen's household access to food was low. Not only is access to food weak, but fishermen's households are also very likely to experience uncertainty in achieving conditions of food sufficiency, food security, and food sustainability due to restrictions on activities during the Covid-19 pandemic. Food security is very important because it is not only a basic need but also a basic right for every human being that must be fulfilled (Salim & Darmawaty, 2016).

Kobi & Hendra, (2020).bajo fishermen as a coastal community have a low level of welfare and face problems in fulfilling food so that knowledge is needed about the factors that affect the household food security of the Bajo community. Research on the Bajo community is very important to continue to be scientifically studied to improve food security and stop hunger levels in coastal areas (Yunus, Zani & Limi, 2020). Based on the description above, the purpose of this study is to determine the factors that affect the household food security of the Bajo community during the Covid-19 pandemic.

2. Research Methods

The research was conducted in March-May 2020. The research location was in West Muna District, especially in Napano Kusambi Sub District. The determination of the research location was carried out deliberately (Purposive), with the consideration that the area is a coastal area where the Bajo people live, most of whom work as fishermen. Determining the number of household samples using the Slovin formula using a 10% degree of error (Hasan, 2000), the sample in this study was 64 households.

Analysis of the data used to determine the factors that affect the household food security of the Bajo community in Napano Kusambi Sub District, West Muna District, is achieved by quantitative analysis using Binary Logistic Regression. This binary logistic regression analysis is used to see the effect of the independent

variable on the number of household members (X1), housewives education (X2), education of the head of the household (X3), rice prices (X4), egg prices (X5), household income. (X6), the age of the head of the household (X7), and the age of the housewife (X8), the dependent variable is Y, which is a binary response variable which only has two values (0 and 1). The dependent variable analyzed was food security. The general form of the logistic binary regression probability model is:

$$p(x) = \frac{\exp(\beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_n x_n)}{1 + \exp(\beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_n x_n)}$$

Information:

$p(x)$ = Food Security

exp = Exponent

β = Regression coefficient

To obtain a linear function, a simpler equation is obtained:

$$Y = \ln \left[\frac{p(x)}{1-p(x)} \right] = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + e$$

Information:

Y = Food Security (0 = food insecurity and 1 = food resistance)

β = Regression Coefficient

X1 = Number of family members (people)

X2 = Education level of housewives (years)

X3 = Education level of the head of the household (years)

X4 = Price of rice (IDR / liter)

X5 = Price of eggs (Rp / egg)

X6 = Income (IDR / month)

X7 = Age of household head (years)

X8 = Age of the housewife (years)

3. Results and Discussion

3.1. Respondent characteristics

Characteristics of respondents regarding the household conditions of the Bajo community. The characteristics of respondents described in this study include age, education, and a number of household members.

Table 1. Characteristics of respondents

| No. | Description | Number of respondents | Percentage |
|-----|--|-----------------------|------------|
| 1. | Age (Years) | | |
| | 25 - 54 | 56 | 87,50 |
| | > 54 | 8 | 12,50 |
| 2. | Education of the head of the household | | |
| | No school | 14 | 21,87 |
| | Primary school | 35 | 54,69 |

| No. | Description | Number of respondents | Percentage |
|-----|--------------------------------------|-----------------------|------------|
| | Junior High | 5 | 7,81 |
| | High school | 7 | 10,94 |
| | Bachelor | 3 | 4,69 |
| 3. | Housewife education | | |
| | No school | 9 | 14,06 |
| | Primary school | 38 | 59,38 |
| | Junior High | 8 | 12,50 |
| | High school | 6 | 9,37 |
| | Bachelor | 3 | 4,69 |
| 4. | Number of household members (people) | | |
| | 2 - 4 | 35 | 54,69 |
| | 5 - 7 | 24 | 37,50 |
| | > 7 | 5 | 7,81 |

The results showed that the households of the Bajo community in Napano Kusambi Sub District with productive age were more (87.5%) than households with non-productive age (12.5%). This shows that the productive age can affect productivity and is considered to have high enthusiasm for doing a job. It is through this work that someone will get an income that will be used to meet various needs. Age level has an influence on the physical ability and willingness of people to work and is one of the factors that affect fishing activities. As you get older, a person's productivity will increase but will again decline after passing the productive age. Non-productive age is in the range of 0-14 years, the productive age category is in the range of 15-54 years and those aged 54 years and over are less productive (Soeharjo & Patong, 1984). The productive age population is also assumed to support other non-productive age residents. This means that someone who is of productive age takes his own life individually and also supports the lives of others who are not productive (Yuszzar, 2008).

The latest education level of the head of the household in this study is that most of the education of the head of the Bajo community household in Napano Kusambi Sub District is at a low level of formal education, namely graduating from elementary school (54.69%). Households at the S1 education level (4.69%). The level of education of the head of the household, directly and indirectly, determines the economic situation of the family. Likewise, the education of the wife in addition to the main capital in the household economy also plays a role in regulating the household diet (Tarwotjo, et al., 1988). A husband with high education is likely to get a decent job so that the family's economic situation will be better. The level of education is one of the factors that can

affect the ability to accept technology, innovation, information, and decision making in carrying out activities as a fisherman. Food security is influenced by the formal education of the head of the family and the housewives. Both levels of education will have an impact on household food consumption patterns which largely determine the quality and quantity of food consumed.

The last education level of the housewives in this study shows that the average level of education of the wife/housewives of the Bajo community mostly only graduated from elementary school (59.38%). Based on these data it can be said that respondents have a relatively low level of education. Housewives have an important role in meeting food needs and regulating food conditions, income and expenditure in the household. This is because if the mother has a high education it is possible to have an understanding of food nutrition so that she can adjust her diet, food quality and meet energy needs in the household.

The number of Bajo community household members is known that the respondents who have 2-4 dependents are 35 people (54.69%), the respondents who have 5-7 dependents are 24 people (37.5%), and respondents who had more than 7 dependents were 5 people (7.81%). The number of family members also has a direct effect on the adequacy of family food consumption. The number of family members is generally related to household expenses. Therefore, the greater the number of family members, the greater the economic burden that must be met in the family, so that all household needs can be met. The number of household members is all household members who live in one house and is measured in soul units. The number of family members has an important contribution in providing labor, on

the other hand, it also causes the high cost of living that must be met by a family. Rumapea, (2018), explains that the relationship between the number of household members and food consumption is where the larger the household size, the less food available which can be distributed to each household member so that less food is consumed.

3.2. Factors Affecting Household Food Security of Bajo Communities

The factors that influence household food security of the Bajo community in West Muna District are used data from interviews with respondents. The data is then tabulated, processed, and analyzed using a logistic regression analysis model. Based on the analysis result, the score of the overall percentage is 53.1%, this value is quite good. This means that around 53.1% of the food security variable can be explained by the eight independent variables, namely the number of household members (X1), the education of the housewife (X2), the education of the head of the household (X3), the price of rice (X4), the price of eggs (X5), income (X6), age of the head of the household (X7), and age of the housewife (X8) were entered into the model. While the rest, namely 47%, is explained by other variables that are not included in this research model.

Chi-square value (X^2) is 53.618 with degrees of freedom (Df) = 8, and probability (p-

value) is 0.000. The probability value is <0.1 , so it can be concluded that the eight variables are the number of household members, the education of the housewife, the education of the head of the household, the price of rice, the price of eggs, income, age of the head of the household, and the age of the housewife simultaneously or as a whole. significant effect on household food security of the Bajo community.

The results of the eight variables included in the model were at the 90% confidence level or the tolerable error rate (α) of 10%. Variables of household income, age of head of household, and age of housewife have a significant effect on household opportunities to achieve food security. While the variables of the number of household members, the education of housewives, the education of the head of the household, the price of rice, and the price of eggs have no effect on household food security.

The results of logit regression analysis regarding the effect of the number of household members, the education of housewives, the education of the head of the household, the price of rice, the price of eggs, income, the age of the head of the household, the age of the housewife on the household food security of the Bajo community in Napano Kusambi Sub District West Muna is presented in Table 2.

Table 2. Results of binary logistic regression analysis

| Description | B | Exp(B) | Wald | Sig. |
|---|-------------|--------|-------|--------------------|
| X1 (Number of household members) | -.218 | .804 | .067 | .796 ^{ns} |
| X2 (Housewife education) | -.152 | .859 | .662 | .416 ^{ns} |
| X3 (Education of the head of the household) | .249 | 1.283 | 1.949 | .163 ^{ns} |
| X4 (Price of rice) | .001 | 1.001 | .717 | .397 ^{ns} |
| X5 (Price of eggs) | .000 | 1.000 | 1.014 | .314 ^{ns} |
| X6 (Income) | .000 | 1.000 | 9.962 | .002* |
| X7 (Age of head of household) | -.359 | .698 | 3.258 | .071* |
| X8 (Age of housewives) | .369 | 1.447 | 3.356 | .067* |
| Constant | -36.124 | .000 | 4.664 | .031* |
| Overall Percentage | 53,1% | | | |
| X^2 | 53,618 | | | |
| Degrees of freedom (Df) | 8 | | | |
| p-Value | 0,000 < 0,1 | | | |

Information:

ns = no significant effect, with a confidence level of 90% or $\alpha = 0.1$

* = significant effect with a confidence level of 90% or $\alpha = 0.1$

The logit analysis equation model used to estimate the factors that affect the household food security of the Bajo community is:

$$Y = \ln \left[\frac{p(x)}{1-p(x)} \right] = -36.124 - 0,218X1 - 0,152X2 + 0,249X3 + 0,001X4 + 0,000X5 + 0,000X6 - 0,359X7 + 0,369X8$$

1) Effect of Number of Household Members on Household Food Security of Bajo Communities (X1)

The logit significance test results for the variable number of household members (X1) obtained a wald statistical value of 0.067 and a significant value of 0.796. This significant value is greater than $\alpha = 0.1$, meaning that the variable number of household members has no significant effect on the household food security of the Bajo community in Napano Kusambi Sub District, West Muna District. If the number of household members increases by 1 person, it will decrease food security or the value of food expenditure, because more household members will increase the cost of eating. The number of family members has a negative effect, where the number of family members decreases food security because more household members are considered to increase the burden on the family in meeting food needs (Pratiwi, 2018). This is in line with research which states that the results of the logistic regression test calculations on the variable number of household members do not have an effect on the food security of urban and rural farm households (Widyanitha, Hardyastuti, & Mulyono, 2015). The results of this study are different from the research which states that the variable number of family members has a significant effect on the household food expenditure of farmers (Suhadini, Yunus, & Zani, 2019).

2) The Effect of Housewife Education on Household Food Security in Bajo Communities (X2)

The results of the logit significance test for the housewife education variable (X2) obtained a wald statistical value of 0.662 and a significant value of 0.416. This significant value is greater than $\alpha = 0.1$, meaning that the variable housewife education does not have a significant effect on household food security for the Bajo community in Napano Kusambi Sub District, West Muna District. This is in line with Yuliana, (2013) which states that the results of the logistic regression test

have no effect on fishermen's household food security, which shows that the knowledge that fishermen housewives have in providing food consumption for their household members does not come from formal education. Thus, this research states that the results of the logistic regression test calculations on the housewife education variable do not affect the food security of farmer households (Aulia, 2019). Likewise, Sahudini, (2019) which states that the variable housewife education does not have a significant effect on household food expenditure of farmers.

3) The Effect of Head of Household Education on Household Food Security of Bajo Communities (X3)

The results of the logit significance test for the education variable of the head of the household (X3) obtained a wald statistical value of 1.949 and a significant value of 0.163. This significant value is greater than $\alpha = 0.1$, meaning that the education variable of the head of the household does not have a significant effect on household food security for the Bajo community in Napano Kusambi Sub District, West Muna District. This is in line with research which states that the results of the logistic regression test calculations on the education variable of household heads have no effect on the share of food expenditure (Sugiarto, Karyani, & Rochdiani, 2018). Likewise, Widyanitha's research (2015), which states that the results of the logistic regression test calculations on the education variable of household heads do not have an effect on the food security of urban and rural farm households. Likewise with Sahudini, (2019) which states that the education variable of the head of the household does not have a significant effect on household food expenditure of farmers.

4) The Effect of Rice Prices on Household Food Security of Bajo Communities (X4)

The logit significance test results for the rice price variable (X4) obtained a wald statistical value of 0.717 and a significant value of 0.397. This significant value is greater than $\alpha = 0.1$, meaning that the rice price variable does not have a significant effect on the household food security of the Bajo community in Napano Kusambi Sub District, West Muna District. This is in line with Sugiono, (2018) which states that the results of the logistic regression test calculations on the rice price variable have no effect on the share of food expenditure. This is in line with the results of research which states that there is no influence of the variable price of rice on the food security of

poor households in urban areas (Nurdiani & Widjojoko, 2016). This is in line with the results of Delly, (2018) which states that there is no effect of the variable price of rice on the level of household food security of fishermen. Likewise, Widyanitha, (2015) which states that the results of the logistic regression test calculations on the rice price variable do not have an effect on the food security of urban and rural farm households. The results of this study are in line with the research which states that the results of the regression analysis on the rice price variable do not affect the level of household food security of farmers.

5) Effect of Egg Prices on Household Food Security of Bajo Communities (X5)

The logit significance test results for the egg price variable (X5) obtained a wald statistical value of 1.014 and a significant value of $\alpha = 0.314$. This significant value is greater than $\alpha = 0.1$, meaning that the variable price of eggs has no significant effect on the household food security of the Bajo community in Napano Kusambi Sub District, West Muna District. This is in line with the research of Widyanitha, (2015), which states that the results of the logistic regression test calculations on the egg price variable have no effect on the food security of urban and rural farm households.

6) The Effect of Income on Food Security in the Household of the Bajo Community (X6)

The results of the logit significance test with wald statistics for the income variable (X6) obtained a wald statistical value of 9.962 and a significant value of 0.002. This significant value is smaller than $\alpha = 0.1$, meaning that the income variable has a significant and positive (real) effect on the household food security of the Bajo community in Napano Kusambi Sub District, West Muna District. If income increases, it will increase food security, because income is the determinant in regulating consumption expenditure. This is in line with the research of Damayanti (2016), which states that the results of the logistic regression test calculations have a significant (positive) effect on the income variable on the level of household food security of farmers. This is in line with the research of Susilowati, (2014) which states that household income has a positive effect on the level of food security for poor households in Sragkan District. This is in line with research that states that income variables have a significant effect on the level of food security for poor households (Sukarniati, 2018).

Likewise, Widyanitha, (2015), which states that the income variable has a significant (positive) effect on farm household food security, which shows that the higher one's income, the smaller the share of household expenditure will be. The share of food expenditure has an inverse relationship with the level of food security. If a household has a low share of food expenditure (<60%), the level of household food security will be even higher. Thus, to increase household food security efforts must be made to increase household income. Likewise with Sahudini's research (2019), which states that income variables have a significant effect on farmer household food expenditure. The income variable has no effect on the level of fishermen's household food security (Delly 2018).

7) The Effect of Age of Head of Household on Household Food Security of Bajo Community (X7)

The logit significance test results for the age variable of the head of the household (X7) obtained a statistical value of 3.258 and a significant value of 0.071. This significant value is less than $\alpha = 0.1$, meaning that the variable age of the head of the household has a significant and negative (not significant) effect on household food security of the Bajo community in Napano Kusambi Sub District, West Muna District. Increasing the age of the head of the household will reduce food security because the age of the head of the household affects productivity and enthusiasm for work so that if the enthusiasm for work decreases, income decreases, which causes food security to decline. This is in line with Sugianto, (2018) which states that the age variable of the head of the family has a negative effect on the food security of farmer households. The test results show that the age of the household head who is getting older will have an effect on the decline in the food security status of farmer households. This is in line with research (Susilowati, (2014) that the age variable of the household head has a negative effect on poor household food security. This is different from the results of the study, which stated that the age of the head of the household had no effect on the level of household food security of farmers (Damayanti & Khoirudin, 2016). This is also in line with research by Sukarniati, (2018) which states that the age variable of the head of the household affects the level of food security of poor households.

8) The Effect of Age of Housewives on Household Food Security in Bajo Communities (X8)

The results of the logit significance test for the variable age of housewives (X8) obtained a statistical value of 3.356 and a significant value of 0.067. This significant value is less than $\alpha = 0.1$, meaning that the variable of housewife age has a significant and positive (real) effect on household food security of the Bajo community in Napano Kusambi Sub District, West Muna District. If a housewife gets older, it will increase food security, because the older the housewife will have more experience in managing and processing consumption expenditure in her household. This is in line with research which states that the variable of housewife age has a negative effect on household food security (Ediwiati, Koestiono, & Setiawan, 2015). This is different from Handayani's research (2019), which states that the variable age of housewives has no effect on household food consumption patterns in implementing villages and not implementing programs for accelerating diversification of food consumption.

4. Conclusions

The results showed that the factors that significantly affected the household food security of the Bajo community in Napano Kusambi Sub District during the Covid 19 pandemic were that the income and age of housewives had a positive effect on family food security, while the age factor of the household head had a negative effect on food security family.

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